

REMARKS

At the time of the Office Action dated May 14, 2004, claims 1-14 were pending and rejected in this application. Applicants acknowledge, with appreciation, the Examiner's allowance of claims 6-10. Applicants also acknowledge, with appreciation, the Examiner's indication that claims 5 and 13 contain allowable subject matter. Claim 1 has been amended by incorporating the limitations of claim 4 therein, and consequently claim 4 has been cancelled. Applicants submit that the present Amendment does not generate any new matter issue.

**CLAIMS 1, 3-4, 11-12 AND 14 ARE REJECTED UNDER 35 U.S.C. § 102 FOR ANTICIPATION
BASED UPON YAMAZAKI ET AL., U.S. PATENT NO. 6,242,292 (HEREINAFTER YAMAZAKI)**

On pages two through seven of the Office Action, the Examiner asserted that Yamazaki discloses a method of manufacturing a semiconductor device corresponding to that claimed. This rejection is respectfully traversed.

Initially, Applicants note that independent claim 1 has been amended to include the limitations previously presented in claim 4. With regard to claim 4, the Examiner stated the following on page 7 of the Office Action:

Pertaining to claims 4 and 12, Yamazaki teaches the invention according to claims 1 and 11, "wherein each pulse from the laser respectively irradiates non-identical portions of the source/drain regions." Please refer back to the statements disclosed pertaining to claims 1 and 11, with regards to the confirmation of continuous movement of the laser and substrate relative to one another (see steps 4-6 as previously outlined). With these statements, it is confirmed that the portions of the source/drain regions must be irradiating "non-identical portions" simply because of the continuous movement of the laser and the substrate relative to one another to form connections of the source and drain regions of the TFTs.

Applicants respectfully disagree. The Examiner's assertion is based on an inaccurate and unsupported determination that Yamazaki teaches continuous movement of the laser and substrate relative to one another. The Examiner's analysis regarding this belief is found on pages 5 and 6 of the Office Action and reproduced below:

Additionally, since the laser beam is a scanning beam, it is inherent that the beam will activate "another portion" or different portions of the source/drain regions as the beam moves along the substrate. See col. 8, lines 30-54; col. 9, lines 44-50 and 58-67; col. 10, lines 1-5 and FIG. 5, wherein the laser moves over the transistor source/drain regions to form crystallinity between the source/drain regions.

(c) finally, stated in col. 7, lines 56-60, addresses the laser energy and the number of pulses (pulse width 30 ns, 30 pulses/s). It is inherent that since the laser beam is a scanning beam, the beam will activate another portion of the source/drain regions using another pulse of laser energy as the beam moves over the source/drain region.

(a) As stated under col. 7, lines 50-55, "the substrate (sample) on which the silicon film is formed is placed on the stage and the laser light is irradiated onto the whole surface of the substrate by moving the stage at 2mm/s." This statement confirms "movement as the laser and the substrate is relative to one another... is continuous" as claimed in applicant's invention. (emphasis in original)

Applicants submit that the Examiner's reliance upon the doctrine of inherency to disclose that the laser and substrate continuously move relative to one another is misplaced. Inherency may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient to establish inherency. To establish inherency, the extrinsic evidence must make clear that the missing element must necessarily be present in the thing described in the reference. There is nothing in the passages cited by the Examiner that necessarily means after each pulse, the laser moves relative to the substrate or that each pulse from the laser respectively irradiates non-identical portions of the source/drain regions.

The statement in Yamazaki that "the stage [is moved] at 2mm/s" is not dispositive that the movement of the stage (upon which the substrate is placed) relative to the laser is continuous. The average speed of 2mm/s can be obtained by keeping the laser stationary relative to the

substrate for a certain period of time and moving the laser relative to the substrate at a speed greater than 2mm/s to arrive at the average speed of 2mm/s. Furthermore, while the laser is stationary relative to the substrate, the substrate can receive multiple pulses from the laser. Since inherency requires that the missing element be necessarily present in the teaching, Yamazaki cannot be used to inherently, (i.e., necessarily) teach the limitations discussed above because the laser can be stationary relative to the substrate while still obtaining an average speed of 2mm/s.

Not only does Yamazaki fail to inherently teach the above-mentioned limitations, Yamazaki actually teaches away from these limitations. As discussed in column 7, lines 56-63 and column 2, lines 36-44, Yamazaki teaches a "two stage irradiation" process in which a preliminary irradiation is followed by a main irradiation. Thus, each portion receives at least two pulses (i.e., a pulse from a preliminary irradiation and a pulse from a main irradiation). This teaching by Yamazaki cannot be reconciled with the limitation in independent claim 1 that "each pulse from the laser respectively irradiates non-identical portions of the source/drain regions" or with the limitation in independent claim 11 that "the laser and the substrate move relative to one another after each pulse of laser energy." Applicants, therefore, respectfully submit that the imposed rejection of claims 1, 3-4, 11-12 and 14 under 35 U.S.C. § 102 for anticipation based upon Yamazaki is not factually viable and, hence, solicit withdrawal thereof.

**CLAIM 2 IS REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON
YAMAZAKI IN VIEW OF INO ET AL., U.S. PATENT NO. 6,248,606 (HEREINAFTER INO)**

On pages eight and nine of the Office Action, the Examiner asserted that one having ordinary skill in the art would have been motivated to modify Yamazaki's method in view of Ino to arrive at the claimed invention. This rejection is respectfully traversed.

Claim 2 depends ultimately from independent claim 1, and Applicants incorporate herein the arguments previously advanced in traversing the imposed rejection of claim 1 under 35 U.S.C. § 102 for anticipation based upon Yamazaki. Specifically, Yamazaki neither discloses nor suggests that each pulse from the laser respectively irradiates non-identical portions of the source/drain regions. The secondary reference of Ino also discloses does not disclose this limitation. Accordingly, the proposed combination of references would not yield the claimed invention. Applicants, therefore, respectfully submit that the imposed rejection of claim 2 under 35 U.S.C. § 103 for obviousness based upon Yamazaki in view of Ino is not viable and, hence, solicit withdrawal thereof.

Applicants have made every effort to present claims which distinguish over the prior art, and it is believed that all claims are in condition for allowance. However, Applicants invite the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. Accordingly, and in view of the foregoing remarks, Applicants hereby respectfully request reconsideration and prompt allowance of the pending claims.

Application No. 10/021,782

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417, and please credit any excess fees to such deposit account.

Respectfully submitted,

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